

CLAIMS

1. A vehicle fault diagnostic system, which includes a vehicle and an information center that are capable of communicating with each other, the vehicle fault diagnostic system comprising:

vehicle data detection means that is installed in the vehicle to detect vehicle data;

fault detection means that is installed in the vehicle or in the information center to detect a vehicle fault in accordance with said vehicle data;

identification process instruction means that is installed in the information center to find arising of the vehicle fault and to instruct the vehicle to perform a fault identification process for identifying the cause of the vehicle fault;

identification process execution means that is installed in the vehicle to perform the fault identification process that is instructed;

identification process result return means that is installed in the vehicle to return the result of said fault identification process to the information center;

fault location identification means that is installed in the information center to identify the fault location in accordance with the result of said fault identification process, which is returned from the vehicle;

and

identified fault countermeasure means that is installed in the information center to take countermeasures against the identified fault.

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2. The vehicle fault diagnostic system according to claim 1, wherein said identified fault countermeasure means includes recovery process instruction means for instructing the vehicle to perform a recovery process for eliminating the influence of the identified fault, the vehicle fault diagnostic system further comprising:

recovery process execution means that is installed in the vehicle to perform the recovery process that is instructed; and

15 process determination means that is installed in the vehicle or in the information center to determine in accordance with the result of said recovery process whether another recovery process should be continued or not.

20 3. The vehicle fault diagnostic system according to claim 2, wherein said recovery process instruction means includes

most serious fault storage means for storing most serious faults and

25 recovery target limiting means for issuing instructions for performing said recovery process only when

a detected fault is one of the most serious faults.

4. The vehicle fault diagnostic system according to any one of claims 1 to 3, wherein said identification process
5 instruction means includes

serious fault storage means for storing serious faults and

identification target limiting means for issuing instructions for performing said fault identification
10 process only when a detected fault is serious.

5. A vehicle fault diagnostic system, which includes a vehicle and an information center that are capable of communicating with each other, the vehicle fault diagnostic
15 system comprising:

vehicle data detection means that is installed in the vehicle to detect vehicle data;

fault detection means that is installed in the vehicle or in the information center to detect a vehicle
20 fault in accordance with said vehicle data;

recovery process instruction means that is installed in the information center to find arising of the vehicle fault and to instruct the vehicle to perform a recovery process for eliminating the influence of the vehicle fault;

25 recovery process execution means that is installed in the vehicle to perform the recovery process that is

instructed; and

process determination means that is installed in the vehicle or in the information center to determine in accordance with the result of said recovery process whether
5 another recovery process should be continued or not.

6. The vehicle fault diagnostic system according to claim 5, wherein said recovery process instruction means includes

10 most serious fault storage means for storing most serious faults and

recovery target limiting means for issuing instructions for performing said recovery process only when a detected fault is one of the most serious faults.

15 7. A vehicle fault diagnostic system, which includes a vehicle and an information center that are capable of communicating with each other, the vehicle fault diagnostic system comprising:

20 fault characteristic value detection means that is installed in the vehicle to detect a fault characteristic value stemming from arising of a particular fault;

fault seriousness determining means for determining the serious degree of detected said fault in accordance with
25 the magnitude of said fault characteristic value; and

supply information limiting means for supplying the

detected information about said fault to the information center only when said serious degree exceeds a judgment value.

5 8. The vehicle fault diagnostic system according to claim 7, further comprising:

recovery process instruction means that is installed in the information center to instruct the vehicle to perform a recovery process for eliminating the influence of said
10 fault whose information is supplied from the vehicle;

recovery process execution means that is installed in the vehicle to perform the recovery process that is instructed; and

process determination means that is installed in the
15 vehicle or in the information center to determine in accordance with the result of said recovery process whether another recovery process should be continued or not.

9. The vehicle fault diagnostic system according to
20 claim 8, wherein said supply information limiting means supplies information including said fault characteristic value to the information center as the information about said fault, and wherein said recovery process instruction means includes urgency judgment means, which, when the
25 information about said fault is supplied from the vehicle, judges in accordance with said fault characteristic value

whether the fault should be recognized as an urgent fault;
and recovery target limiting means for issuing instructions
for performing said recovery process only when said fault
whose information is supplied from the vehicle is urgent.

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10. The vehicle fault diagnostic system according to
any one of claims 7 to 9, further comprising:

identification process instruction means that is
installed in the information center to instruct the vehicle
10 to perform a fault identification process for identifying
the cause of said fault whose information is supplied from
the vehicle;

identification process execution means that is
installed in the vehicle to perform the fault identification
15 process that is instructed;

identification process result return means that is
installed in the vehicle to return the result of said fault
identification process to the information center; and

fault location identification means that is
20 installed in the information center to identify a fault
location in accordance with the result of said fault
identification process, which is returned from the vehicle.

11. The vehicle fault diagnostic system according to
25 any one of claims 1 to 10, wherein said fault identification
process includes a plurality of inspection modes, and

wherein said fault location identification means includes identification process completion means, which determines that the fault identification process is completed when a fault location can be identified in accordance with a fault identification process result that is returned from the vehicle; and identification process continuation means, which causes said identification process instruction means to instruct the start of an inspection mode corresponding to the result when the fault location cannot be identified in accordance with said result.

12. The vehicle fault diagnostic system according to any one of claims 1 to 11, further comprising:

fault distance estimation means that is installed in the vehicle or in the information center to estimate the travel distance remaining before a fault occurs in the vehicle in accordance with said vehicle data; and

either fault distance display means for displaying said travel distance remaining before a fault occurrence within the display or fault distance transmission means for transmitting said travel distance to a vehicle maintenance factory.